

22 Comprehension and Discussion of Text

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A mind, once stretched by a new idea, never regains its original dimensions.

Oliver Wendell Holmes

DEFINING DISCUSSION

Discussion has been a staple instructional activity used in classrooms for many years. However, its form and purpose have evolved considerably over time. In its typical, or traditional form, discussion occurs as a post-reading event in which the teacher assists and assesses students' comprehension of text (Barr & Dreeben, 1991). This type of discussion (alternatively referred to as recitations or teacher-led discussions) usually occurs with the whole class or with a small group of students. The teacher plays a central role by initiating topics for discussion, usually by asking questions, and soliciting student responses to those questions. Students typically assume the role of respondent, and the teacher evaluates their responses. Cazden (1986) and Mehan (1979) characterized the patterns of discourse in these classroom events as having an I-R-E (initiate, respond, evaluate) participant structure.

The types of questions asked during these more controlled teacher-led discussions of text tend to be literal, factual, and known-answer questions (Alpert, 1987; Skidmore, Perez-Parent, & Arnfield, 2003). Much of the research in the 1980s found that the type of teacher questioning found in traditional, teacher-led discussions diminished students' cognitive, affective, and expressive responses; stalled and interrupted student discourse; and led to decreased motivation, cognitive disengagement, and passivity (e.g., Alpert, 1987; Dillon, 1985).

Because traditional teacher-led discussions often consist of the teacher asking questions with known answers, there is actually little to discuss because the underlying theoretical assumption implies that there is a single, correct interpretation of text (Almasi, 2002). Thus, these classroom events take on an evaluative tone in which there are correct answers that lead to a particular interpretation of text.

The teacher is not only considered the interpretive authority, but also the authority in terms of how the interaction proceeds. That is, by asking questions the teacher not only determines the topics of conversation, but also who may talk, when they may talk, and for how long. Many teacher behaviors such as calling on some students less often, providing less wait time for some students, and providing evaluative feedback induce passivity among low achieving students in particular (Good, Slavings, Harel, & Emerson, 1987). These students often choose to remain passive to avoid making mistakes in public.

As well, when teachers persist in asking literal questions students adjust their expectations, values, and purposes for reading accordingly. In short, they learn that what

is valued in terms of classroom expectations is a literal understanding of text, thus they focus on literal readings of texts rather than critical, higher level, or interpretive readings.

When the instructional context leads to student passivity and disengagement, comprehension suffers because proficient comprehension requires active cognitive engagement in which readers construct meaning and use metacognitive and self-regulatory strategies to make sense of texts (Baker & Brown, 1984; Garner, 1987; Meece, Blumenfeld, & Hoyle, 1988; Pressley, 2000). Thus, for the purpose of this chapter, traditional teacher-led forms of classroom discussion that feature a series of literal, known-answer questions and I-R-E participant structures will not be considered.

Instead, discussion is defined as a dialogic classroom event in which students and teachers are cognitively, socially, and affectively engaged in collaboratively constructing meaning or considering alternate interpretations of texts to arrive at new understandings (Almasi, 2002). In contrast to the notion of a single correct interpretation of text, this definition suggests theoretically that multiple and conflicting interpretations of text can co-exist (Fish, 1980; Rosenblatt, 1938/1976, 1978). Such discussion requires the type of critical and evaluative thinking that is essential to achieving higher levels of comprehension. It requires that participants have a questioning attitude, engage in logical analysis, make inferences, make evaluations, and make judgments about the texts they read and the ideas and interpretations of others (Almasi, 2007).

In dialogic discussions participants may enter the discussion with individual, temporary understandings or "envisionments" of text (Langer, 1995), but the discussion is a space in which all participants are open to the ideas, opinions, and interpretations of others (Bridges, 1979). Thus, the ideas contained in the text are contemplated, deliberated, and debated by respondents. This means individual interpretations may be shaped, reshaped, and altered by the discussion, but it also means that the discussion is shaped, reshaped, and altered by individual's contributions. In short, dialogic discussion is a recursive space that shapes and is shaped by its participants. It is a space where meaning resides (Fish, 1980; Rosenblatt, 1938/1976, 1978).

The goal of this chapter is to review research that examines the impact of such dialogic discussion on students' comprehension and understanding of text.

THEORETICAL ISSUES

Sociocultural theory

Sociocultural perspectives of learning assume learners actively construct knowledge in dialogic interactions with others (Vygotsky, 1978). From this perspective, learning involves a relationship between the learner's cognitive processes and the cultural, historical, and institutional settings in which the learner is situated (Wertsch, 1985). In contrast to traditional perspectives in which learning is viewed as the transmission of skills and knowledge to be applied later in authentic activities, sociocultural perspectives assume that learning develops through talk and interaction with others (Wells, 1986).

The guiding principles of dialogic discussion are rooted in sociocultural theories of development that maintain children learn the intellectual rules, procedural rules, and social conventions of discussion by observing and participating in them (Vygotsky, 1978). Social learning environments enable learners to observe and interact with more knowledgeable others as they engage in cognitive processes they may not be able to

engage in independently. Learning in these social environments may occur incidentally as learners observe the cognitive and social processes of their peers, or learning may be more direct when teachers or peers function as more knowledgeable others to scaffold learning. Through scaffolding, learners become capable of achieving more than they could have independently (Rogoff, 1990; Vygotsky, 1978). As a result of incidental learning or scaffolded instruction, learners gradually internalize higher cognitive functions, such as interpreting literature or monitoring one's comprehension. Dialogic discussions provide a social environment in which students can observe the cognitive and social processes of their peers and begin to use the strategies they observe for interpreting literature and interacting with one another in a productive manner. Thus, learning occurs first on an interpersonal plane where language functions as a mediating tool. Over time, the learning appears on an intrapersonal plane where it is internalized for use by the learner (Vygotsky, 1978).

Instructional scaffolding for comprehension through discussion

Wood, Bruner, and Ross (1976) are credited with the original use of the scaffolding metaphor as it pertains to instructional contexts. In their study of the nature of the tutorial process as 3-, 4-, and 5-year-old children learned how to build a wooden structure while being tutored by an adult/expert, they noted that:

Discussions of problem solving or skill acquisition are usually premised on the assumption that the learner is alone and unassisted. If the social context is taken into account, it is usually treated as an instance of modeling and imitation. But the intervention of a tutor may involve much more than this. More often than not, it involves a kind of "scaffolding" process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts. (Wood, Bruner, & Ross, 1976, p. 90)

Their findings emphasized that a learner will not benefit from scaffolding unless they are able to "recognize a solution to a particular class of problems before he is himself able to produce the steps leading to it without assistance" (Wood, Bruner, & Ross, 1976, p. 90). That is, learners must be able to *recognize* the goal or what an appropriate end-product looks like before they can *produce* it on their own. In short, recognition and comprehension of the goal/task must precede production. The authors also stressed the importance of permitting children to do as much on their own as they are capable. That is, the adult, or more knowledgeable other, is a necessary, but temporary, part of the scaffolding process who cedes responsibility for completing parts of the task to the learner as quickly as they are able. Effective instruction requires the tutor to attend to two theoretical models: (1) a theory of how the task or problem may be completed and (2) a theory of the learner's performance characteristics that will enable the tutor to determine at what point responsibility can be handed over to the learner.

Wood, Bruner, and Ross (1976) concluded by offering a theory of instruction based on six scaffolding functions of the tutor. They noted that the tutor must: (a) *recruit* or enlist the learner's attention and interest in the task, (b) *reduce the degrees of freedom* in the task by simplifying it to make it manageable for a given learner until he or she can recognize the task's requirements, (c) *maintain direction* by regularly keeping the learner motivated to attain the goal, (d) *mark critical features* of the task to help the learner see the discrepancy between what they have produced and what is recognized as successful completion of the task, (e) *control frustration*, and (f) *demonstrate or model* solutions to the task. Meyer (1993) noted that this conceptualization of scaffolding not only included a component in which teacher scaffolding assisted cognition (i.e., reduc-

ing the degrees of freedom, marking critical features, demonstrating and modeling), but also a large motivational component related to student engagement (i.e., recruitment, maintaining direction, controlling frustration).

Extending Wood, Bruner, and Ross' (1976) conceptualization further, Meyer (1993) argued that scaffolding in practice often becomes an atheoretical metaphor in which the central tenets underlying it become forgotten. Using a social-constructivist perspective, she proposed three theoretical tenets underlying scaffolding: (a) knowledge is a constructive process in which meaning is negotiated among teachers and learners, (b) context influences this negotiation because one's interactions in a particular context influences the manner in which knowledge is constructed (i.e., some contexts are more supportive than others and some individuals are better at finding more supportive contexts), and (c) knowledge and context are unstable and co-evolve as a natural part of human interaction and development.

Meyer's (1993) third tenet accounts for changes in the context of negotiation. The ability to change with the context requires self-regulated learning. In terms of reading comprehension, self-regulated learners are metacognitively aware when something (e.g., an incongruity between the text and one's prior knowledge, an incongruity within the text itself) has disrupted their understanding and they know how to select and use a repair strategy to remedy their comprehension (Garner, 1987). Similar to Wood, Bruner, and Ross' (1976) notion of recognition preceding production, developing an internal monitoring system in which readers can recognize and resolve such incongruities is essential to proficient comprehension (Almasi, 1995; Baker & Brown, 1984; Paris, Wasik, & Turner, 1991; Pressley, Johnson, Symons, McGoldrick, & Kurita, 1989).

Although Wood, Bruner, and Ross (1976) never cited Vygotskian perspectives in their work, notions of the "zone of proximal development" (Vygotsky, 1978) are reflected in their finding that tutors must mark critical features of the task to highlight the discrepancy between what the learner is able to produce and their recognition of the ultimate goal. Echoing Pearson and Gallagher's (1983) model of explicit instruction in which, during guided practice, teachers gradually "release responsibility" for completing tasks to the students (p. 337), Meyer (1993) similarly emphasized the importance of gradually transferring responsibility for the learning from the adult, or more knowledgeable other, to the child so skills can be used independently. The child must develop the self-regulatory skills that will enable them to successfully complete tasks by actively participating in the process with adults, or more knowledgeable others, who gradually withdraw their support. Meyer (1993) stressed that adults must allow children to participate and regulate and children must know that the adult support is only temporary. These aspects of scaffolding, she argued, are often missing from instructional practice.

Like Wood, Bruner, and Ross (1976), Meyer (1993) also emphasized the importance of not only scaffolding for cognitive competence, but also for a child's motivational and social competence. Such scaffolding must occur from a non-evaluative stance in which the adult is present and available for social, cognitive, and motivational support as a "safety net" (Meyer, 1993, p. 44).

Meyer (1993) defined instructional scaffolding as "the temporary teacher support to the student in the ZPD" (pp. 45–46). Her definition included two processes: negotiation of meaning and transfer of responsibility for learning. Based on her review of literature, she identified six characteristics of instructional scaffolding: (1) teacher support (i.e., how the teacher helps students related new information to their prior knowledge), (2) transfer of responsibility to the learner, (3) dialogue between teachers and students to negotiate understanding, (4) non-evaluative collaboration as a type of formative feedback, (5) appropriateness of the instructional level (i.e., knowledge of the students' current competencies in order to provide guidance toward tasks that can be accomplished with assistance), and (6) co-participation (i.e., the importance of active student

participation and engagement to become autonomous). From these six characteristics, Meyer (1993) concluded that scaffolded instruction is best explained by sociocultural theory:

because it is collaborative, yet non-evaluative, and optimal for student participation and choice. The work of scaffolding is carried out through dialogue, reflecting a social plane of learning. Therefore the metaphor of scaffolding is not that the teacher provides the scaffold while the student builds knowledge, but the teacher and student jointly place the scaffold and construct the outer structure of shared meaning. The scaffolding is removed gradually, and the student completes the constructive process by assuming ownership and using the newly acquired knowledge. (p. 50)

It is through this lens of shared responsibility that scaffolding as an instructional component of discussion will be viewed in this review of literature. Similar to Liang and Dole (2006), we found two ways in which teachers scaffolded comprehension through discussion: microgenetic scaffolding and ontogenetic scaffolding.

Microgenetic scaffolding Vygotsky's (1978) notion of genetic or developmental analysis is essential to understanding each type of scaffolding. Vygotsky (1978) aimed to study the development of higher mental functions (such as comprehension) by understanding its history. Wertsch (1985) noted that, for Vygotsky, the defining characteristics of higher mental functions as opposed to elementary mental functions were: (a) the emergence of voluntary regulation, (b) the emergence of conscious realization of mental processes, (c) the social nature of higher mental functions, and (d) the use of tools to mediate higher mental functions. In comprehension research, we often study the nature of voluntary regulation, or self-regulation, and recognize its importance. As well, we also recognize the importance of conscious realization of mental processes, or metacognition. However, when we begin to also examine the social nature of higher mental functions, such as comprehension and the use of tools such as language as a mediator of comprehension, the methods of examining such development become infinitely more complex.

Vygotsky (1978) believed that to study something historically did not mean studying past events. Instead, it meant to "study it in the process of change . . . to encompass in research the process of a given thing's development in all its phases and changes—from birth to death—fundamentally means to discover its nature, its essence, for 'it is only in movement that a body shows what it is'" (pp. 64–65). Thus, in examining how comprehension develops by participating in discussion, one must examine comprehension not as a product, but as a dynamic process that is continually changing.

Vygotsky's view of genetic or developmental analysis is essential to such study. Wertsch (1985, 1991) described Vygotsky's developmental analysis as consisting of four domains: (a) phylogenesis (i.e., biological evolutionary development), (b) sociocultural history, (c) ontogenesis, and (d) microgenesis. It is the latter two that coincide with the types of instructional scaffolding used to foster comprehension during discussion of text.

Wertsch (1991) described microgenesis as the "emergence of a mental process that occurs during a single training session" (p. 23) and as "the unfolding of a single psychological act (for instance, an act of perception), often over the course of milliseconds" (p. 23). In essence, microgenesis describes how thought develops on a moment-by-moment basis. This notion might be further defined as an act of cognition. Wortham (2006) used the term "cognition" to describe the process of making sense of experience at the time-scale of specific events" (p. 91). In this sense then, studying microgenetic development refers to the process by which thought or understanding develops in a specific event.

In a discussion, microgenetic scaffolding would seek to provide close support to assist comprehension of a particular text. Thus, we are introducing the term "microgenetic scaffolding" to describe scaffolding that is done on a moment-by-moment basis to assist comprehension. Liang and Dole (2006) explained that the ultimate goal of such scaffolding is to understand the content of a given text. They further explained that this type of scaffolding often features a high level of teacher involvement. Teachers in discussions that feature microgenetic scaffolding ask more open-ended questions, queries, and probes designed to help students think and comprehend at deeper levels. As well, teachers might assign roles during discussion as a means of scaffolding the interaction. Thus, the nature of discussions that feature microgenetic scaffolding will differ from those that feature ontogenetic scaffolding.

Ontogenetic scaffolding Ontogenesis involves long-term development in which natural processes interact with cultural or social processes to create growth and change (Wertsch, 1985, 1991). The goal in ontogenetic development is to describe student growth and development over time. In terms of comprehension and discussion, this type of growth and development requires a different type of scaffolding because the immediate and long-term goals differ.

Wortham (2006) used the term "learning" to refer to the process of making sense of experiences on a longer timescale occurring across events. Wortham (2006) argued that learning cannot occur within a single event and that productive learning requires individuals to "systematically change the cognitive tools they use and how they react to affordances across events" (p. 101). Such change takes time because it involves gradual shifts and changes in cognitive processing.

Engeström (as cited in Wortham, 2006) noted that Vygotskian perspectives not only describe "the use of preexisting artifacts in cognition ('internalization'), but also the creation of artifacts that could subsequently be used ('externalization')" (p. 104). In this manner activities such as peer discussions of text are capable of "expanding" when students and teachers create new tools, artifacts, and ways of acting. As students move from one discussion event to another, over time they adopt different resources to adjust to different settings and circumstances. Through this gradual process they create new ways of interacting with one another and new ways of interpreting texts across time.

During this type of long-term, or ontogenetic, scaffolding the teacher's goal is not immediate cognitive development (i.e., comprehension of content) in a microgenetic sense, but ontogenetic development, in which students' abilities to interpret text and learn to sustain conversations about text are scaffolded longitudinally. This type of scaffolding requires teachers at times to relinquish comprehension of the immediate text in order to let children work through the social context and participate fully in the transaction. That is, rather than teachers guiding and scaffolding students' interpretations to deeper levels immediately, teachers foster long-term cognitive and social development.

This type of development is fostered more through discussions that have less teacher involvement, such as peer discussion. Almasi (2002) described peer discussion as an event in which:

students gather to talk about, critique, and understand texts with minimal teacher assistance. Students determine their own topics of conversation and negotiate the procedural rules and social conventions that govern their discussion. Discourse is lively and focuses on personal reactions, responses, and interpretations of what has been read. Students also use a variety of strategic reading behaviors (e.g., comprehension monitoring, imagery, prediction, summarization) and higher levels of

abstract and critical thinking (e.g., making intertextual connections, critiquing author's craft) to participate meaningfully in discussions. (p. 420)

She further defined peer discussion as a sociocultural, dialogic, and democratic endeavor characterized by four features: (1) a moral dimension (i.e., students view themselves and others as worthy participants whose contributions are valued and respected and who are attentive and responsive to others), (2) student-centered, (3) collaborative, and (4) dynamic student roles that may vary from moment to moment. Almasi (2002) further noted that each feature is mutually dependent on the others for successful peer discussion to occur.

In this type of setting, teachers provide scaffolding in which they teach students about interpretive strategies and how to function in a peer discussion *prior to* and *following* peer discussion rather than *during* the discussion. Teachers scaffold in ways that help students learn to recognize features of the task (e.g., What went well in your discussion today? What might we work on to make the discussion better? What might we do to help one another understand the text better?). As well, they scaffold to help students learn to resolve issues on their own (e.g., You said that during your discussion some people tend to dominate, making it difficult for others to join in the conversation. What can we do next time so this is not a problem?).

The actual discussion is intended to be a pure, unimpeded transaction in which students come to their own interpretations rather than being guided in particular interpretive directions by the teacher. As such, reader response perspectives are also critical in framing peer discussion (Rosenblatt, 1938/1976, 1978).

RESEARCH SYNTHESIS

In gathering studies for this review, we found five ways in which researchers have examined discussion and comprehension. First, we examine studies in which the goal was to determine the impact of discussion on comprehension. Second, we examine studies of discussion in which microgenetic scaffolding was used to foster comprehension. Then the use of ontogenetic scaffolding during discussion is examined. This section is followed by a review of studies describing teacher change as they attempt move from microgenetic to ontogenetic scaffolding and studies describing ways to evaluate the quality of peer discussion. Finally, a review of studies from a critical perspective sought to understand student perceptions of discussion and highlight the cautions and limitations of student-centered discussions.

Impact of discussion on comprehension

Applebee, Langer, Nystrand, and Gamoran (2003) examined particular aspects of classroom discussions (e.g., dialogic interaction, envisionment building, extended curricular conversations) and related them to middle and high school students' literary performance on writing tasks (e.g., level of abstraction, level of elaboration). Nineteen schools and 974 students across the United States participated in the study. Data sources included four observations in each teacher's classroom, teacher questionnaires, student questionnaires, and written assessments of students' literacy performance, which were gathered in the fall and spring of one academic year. Results of principal components analysis suggested that dialogic interaction, envisionment building, and emphasis on curricular conversation are related elements that support student understanding of text. Results of hierarchical linear modeling analyses found that high academic demands and

discussion-based approaches were significantly related to higher literacy performance across tracked levels.

Fall, Webb, and Chudowsky (2000) also found that discussion had a positive impact on comprehension in their study of over 500 tenth graders' performance on language arts tests in which they were either permitted to discuss stories with other peers for ten minutes or not permitted to discuss the text with others. The statewide language arts assessment measured students' ability to understand and interpret narrative text, make connections to their own lives, and assume a critical stance. Students were randomly assigned to one of three discussion conditions: discussion toward the beginning of the test, discussion toward the end of the test, and no discussion. Students were also asked to provide self-report evidence of changes in their understanding of text. Results showed that students who had the opportunity to discuss the story showed an increase in literal understanding of textual facts from the first part of the test to the second whereas students who did not have the opportunity to discuss showed a decrease in literal understanding. As well, students who participated in discussions showed more evidence of changes in their understanding of factual information throughout the test as a result of discussion. Finally, the study showed that even a small amount of discussion has the potential to produce significant increases in students' understanding of narrative text.

Van den Branden (2000) argued that comprehension problems have the most learning potential when they occur in natural, authentic reading situations and when learners negotiate the meaning of a text through social interaction. The quasi-experimental study examined the conditions under which negotiation of meaning promoted comprehension and the extent to which premodifying texts had an impact on first- and second-language learners' reading comprehension.

One hundred fifty-one Dutch fifth graders (61% native Dutch speakers; 39% non-native Dutch speakers) participated in the study and were assigned to one of four levels of Dutch proficiency based on their performance on an editing test administered prior to the start of the study: (a) very high proficiency, (b) moderately high proficiency, (c) moderately low proficiency, and (d) very low proficiency.

Students in each linguistically diverse group received all four treatment conditions as in a repeated measures design: (1) unmodified input condition (students read text and answer comprehension questions silently and independently), (2) premodified input condition (students read text in which vocabulary and syntax were simplified and repetition employed and then independently complete comprehension tests), (3) collective negotiation condition (students read the text silently and work with other students to determine the meaning of unfamiliar words and phrases and then independently complete comprehension tests), and (4) pair negotiation condition (students read the text and work with another students to determine the meaning of unknown words and phrases and then independently complete comprehension tests). The order of treatment condition was counterbalanced across each group. Students completed multiple-choice comprehension tests after they read each chapter of the text.

Analysis of variance with repeated measures showed statistically significant main effects. Post hoc analyses revealed that the collective negotiation and paired negotiation treatment conditions had a significant impact on student performance in several ways. First, students had significantly higher comprehension when they negotiated the meaning of the text via collective negotiation or paired negotiation than when they were exposed to both the unmodified and premodified versions of the text. Second, students at all levels of language proficiency had statistically significantly higher comprehension scores when involved in the two negotiation conditions than when in the unmodified condition. Further, the collective negotiation condition was statistically significantly superior to all other conditions at all levels of language proficiency. Finally, findings

showed that both native and nonnative speakers scored significantly higher in the two negotiation conditions than in the premodified and unmodified conditions.

Van den Branden's (2000) findings suggest that for all students, particularly those with lower levels of language proficiency, collectively negotiating the meaning of text improved comprehension. For these students, the opportunity to work with peers to recognize and resolve their own comprehension problems provided more assistance with comprehension than modifying texts to make them easier to understand.

In summary, findings from these studies suggest that discussion, as a general instructional activity, fosters higher literacy performance in terms of level of abstraction and elaboration (Applebee, Langer, Nystrand, & Gamoran, 2003), significantly higher levels of literal understanding of text (Fall, Webb, & Chudowsky, 2000), and significantly higher levels of both literal and inferential comprehension for students at all levels of language proficiency (Van den Branden, 2000). When considering the impact of discussion on comprehension, it is not only important to understand its overall benefits as a general instructional activity, but also the impact of various types of scaffolding on comprehension.

Microgenetic scaffolding of comprehension during discussions

In this section, we examine the impact of two types of microgenetic scaffolding on comprehension: teacher scaffolding through role assignment and teacher scaffolding through teacher questioning, queries, and probing.

Teacher scaffolding through role assignment Bond (2001) examined how her fifth-graders were able to use assigned roles to make sense of text during student-led discussions of text. Findings showed that students used the connector role most frequently as they made connections to past events, family, and relationships. These connections helped students understand and make sense of text by linking their lives to those of the characters in the texts they were reading.

Morocco and Hindin's (2002) qualitative study examined ways in which middle school students with disabilities contributed to peer-led discussions and how their participation enabled them to build textual understanding, social understanding, and understanding of text. Findings showed students were able to appropriate the discussion facilitation roles introduced by the teacher and they developed the ability to negotiate interpretations of literature through various discourse practices (e.g., stating claims, elaborating on others' claims, countering others' claims with alternate views, using argument to support claims). Like the students in Bond's (2001) study, these students also displayed the ability to deepen their understanding of text by making connections to knowledge from their own lives. Morocco and Hindin (2002) suggested that teacher scaffolding made the discussion task accessible to students. That is, the teacher's use of a sequence of activities that included establishing a purpose for the discussion, discussing and writing responses to text, and revisiting interpretations by reporting out the arguments in their discussions enabled students to meet with success.

In contrast, Almasi and Russell (1998, 1999) found teacher assignment of static roles during peer discussion of expository text to be limiting. Their 3-month descriptive case study followed a group of five third graders as they participated in discussions of expository texts as part of Concept-Oriented Reading Instruction (Guthrie, Van Meter, McCann, Wigfield, Bennett, Poundstone, Rice, Faibisch, Hunt, & Mitchell, 1996). Guthrie and McCann (1996) described these discussions as "Idea Circles," which are peer discussions fueled by multiple informational text sources. Similar to a peer discussion, the teacher is not physically present to guide students' understanding of text. However, the goal of idea circles is in contrast to the goal in discussions of narrative

texts. Whereas discussions of narrative promote the possibility of diverse interpretation, idea circles seek to attain convergence of conceptual understanding. A particular concept (i.e., facts, relations among facts, and explanations) unites the students in dialogue as they build an abstract understanding from information, details, and data contained within the texts.

Almasi and Russell's (1998, 1999) findings revealed that, although the teacher was not physically present in the group, a "shared" culture emerged among students in the group in which the teacher (and her authority) were present semiotically in three ways. First, the teacher was present semiotically in that she assigned and sanctioned the roles that each student assumed. She was also present in the language of the tasks she used to focus student discourse. At times these tasks took on an "assignment status" that led to large amounts of task parameter metatalk focused on organization. Finally, the teacher was semiotically present through the language students used. Quite often the students appropriated the speech genre of the teacher to gain status and authority within the group.

This semiotic teacher presence led to anacretic discourse structures (i.e., one-way exchanges) rather than dialogic discourse. As well, student discourse was consumed by large amounts of metatalk (49.1% of all discourse) in which conversation focused more on who could talk and what they should be talking about rather than discourse related to content and meaning construction (38.4% of all discourse).

Overall, Almasi and Russell (1998, 1999) found students' voices lacked the procedural and declarative knowledge necessary to make them functionally dialogic. In order to make their voices heard and gain some semblance of respect within the group, students attempted to gain authority in four ways: (1) They used formulaic teacher language in an effort to "sound" like the teacher. (2) They used the language of the task in an attempt to force other students into compliance to complete the assigned task. (3) They identified with the teacher and often directly referred to the teacher and what "she said" to elicit authority. (4) They used the teacher-sanctioned authority of their assigned role to gain respect and force others to submit to them. Although the teacher's instructional moves (i.e., assigning roles, assigning a discussion task) were intended to scaffold student learning and comprehension, it led to power struggles among students and created fewer opportunities to construct meaning. These findings are in contrast to those of Bond (2001) and Morocco and Hindin (2002), who found role assignment during discussion enhanced comprehension.

Scaffolding through teacher questioning, queries, and probing Many more studies have been conducted in which teachers engage in microgenetic scaffolding using teacher questions, queries, and probes. Wolf, Crosson, and Resnick (2005) examined the relationship between quality of classroom talk and the degree of academic rigor in reading comprehension lessons. Twenty-one reading comprehension lessons in grades one through eight were examined in 10 schools. Classroom talk consisted of whole class discussions of text in which the teacher asked questions. Stepwise regression analyses showed that student talk in the form of knowledge sharing and thinking were significant predictors of academic rigor during the lessons. Wolf, Crosson, and Resnick (2005) attributed the quality of student talk to high correlations with the types of questions teachers asked. When teachers probed using open-ended queries and follow-up probes such as "How did you know that?" students provided more elaborated responses.

Open-ended probes and queries are also essential to Beck, McKeown, Sandora, Kucan, and Worthy's (1996) examination of Questioning the Author. Questioning the Author is an instructional intervention in which students learn to grapple with the ideas in a text by suggesting that authors are fallible and that the ideas in a text may not be written as clearly as they could be (McKeown, Beck, & Worthy, 1993). In this way students

can see that their need for active cognitive effort while reading may not be a result of their own inadequacies but the author's inability to clearly communicate. Teachers use a series of open-ended queries to initiate discussion, focus on the author's message, link information, identify difficulties with the way the author presented ideas, encourage students to use the text when they have misinterpreted it, recognize plot development and character thoughts/actions, and recognize author's technique (Beck, McKeown, Sandora, Kucan & Worthy, 1996). In their yearlong descriptive study of two teachers and their fourth graders, Beck et al. (1996) examined teacher questions and rejoinders, student-initiated discourse, and the relation between the amount of teacher and student talk. Findings showed teachers made significant changes in the types of questions they asked prior to implementing Questioning the Author and after implementation. Initially, teacher questions focused primarily on retrieving literal information from text. After implementing the Questioning the Author intervention, however, teachers asked more questions aimed at extending the discussion and constructing meaning. Teacher talk was also significantly reduced and student talk significantly increased as a result of participating in Questioning the Author. Prior to the intervention, teacher talk dominated about 80% of all discussion discourse, and dropped to about 60% while implementing Questioning the Author. Student comprehension showed significant increases as did their ability to successfully monitor their comprehension.

A more recent study aimed at investigating the effect of training six teachers to use Questioning the Author have shown similar findings in terms of shifts in teacher question-asking behaviors and amount of teacher and student talk (McKeown & Beck, 2004). Student comprehension and monitoring was not reported.

Sandora, Beck, and McKeown (1999) examined the effects of two discussion formats (Questioning the Author and Great Books) on sixth and seventh graders' comprehension and interpretation of literature. While both discussion formats afford students the opportunity to collaboratively construct meaning and examine text more closely while scaffolded by the teacher, Questioning the Author discussions occur as the text is being read and Great Books discussions occur after the text is read. Findings showed that student recall of text and their responses to open-ended questions was significantly higher for students who participated in Questioning the Author discussions than for those participating in Great Books discussions. As well, the length of students' recalls was significantly greater and their ability to recall complex story elements was greater for students who participated in Questioning the Author. Taken together, these findings suggest that Questioning the Author had a substantially positive impact on students' comprehension.

Like Questioning the Author, Instructional Conversations are discussions in which teachers promote analysis, reflection, and critical thinking among students. Students engage in dialogic conversation with each other and the teacher about textual ideas. Like Questioning the Author, Instructional Conversations are instructional and conversational and feature fewer literal or "known-answer" questions by the teacher. As well, they feature responsivity to student contributions, connected discourse, a challenging (but nonthreatening) atmosphere, and general participation (including self-selected turns; Goldenberg, 1993).

Saunders and Goldenberg (1999) examined the effects of using literature logs and instructional conversations with upper elementary limited-English-proficient and English-proficient students. Students in three fifth-grade and two fourth-grade classrooms were randomly assigned to one of four treatment conditions: (1) literature logs, (2) instructional conversation, (3) literature logs and instructional conversation, or (4) read and study (control). All four treatments were implemented in each classroom across a four day period of time to control for teacher effects. Results showed students who participated in the literature logs and instructional conversation condition and the instruc-

tional conversation only condition scored significantly higher on measures of factual and interpretive comprehension than their peers in the control and the literature log only conditions. Students in the three treatment conditions were significantly more likely to demonstrate an understanding of theme than students in the control condition.

Many (2002) conducted a seven-month naturalistic examination of the nature of instructional scaffolding that occurred as students and teachers constructed meaning of narrative and expository texts using instructional conversations. Fifty students and their teachers in multiage classrooms (third/fourth; fifth/sixth grades) participated in the year long study. Findings showed that scaffolding (by teachers and peers) served two purposes: (1) to help students attain more complex conceptual understanding of the texts (i.e., using outside sources for additional information, using text to support points, making intertextual connections); and (2) to help students develop a repertoire of strategies for reading, writing, and working from texts and strategies for socially constructing knowledge (i.e., presenting to an audience, participating in group discussion, working with peers). Teachers (and peers) also used a variety of scaffolding processes that ranged from scaffolding with more teacher/peer support (modeling, supplying information, clarifying, assisting) to support with student involvement (questioning, prompting, focusing attention) to scaffolding with the greatest amount of student involvement (self-monitoring, labeling effective processes). Overall, scaffolding did not reflect a traditional explanation, modeling, guided practice framework in which responsibility is gradually released to the student. Instead scaffolding reflected varying degrees of support for some students while others were using the same knowledge of strategy use on their own. Scaffolding was responsive to students' needs and was influenced by the classroom context.

McIntyre, Kyle, and Moore (2006) also examined the nature of teacher scaffolding during instructional conversations. Using grounded theory and collaborative teacher action research, they gathered and analyzed data over four days in one teacher's multiage (grades 1–2) elementary classroom. Primary data sources included classroom observations, videotapes, interviews, student assessments, and home visits for family interviews. Findings revealed that “teacher-fronted” discourse that included telling, defining, and modeling at the beginning of lessons can lead to dialogic student interactions. As well, the teacher's use of non-evaluative responses, encouragement rather than praise, examples and suggestions, and linguistic and paralinguistic cues (e.g., pacing and hand gestures) facilitated students' participation and helped bring them into the discussion. In time the teacher became more spontaneous in her ability to scaffold.

Overall, the studies reviewed here found that microgenetic scaffolding, in particular those that use open-ended teacher questions, queries, and probes had a positive impact on student comprehension. Such scaffolding during discussion enhanced the quality of student talk and led to discussions with more academic rigor (Wolf, Crosson, & Resnick, 2005), led to significant gains in comprehension, recall, and ability to monitor their comprehension (Beck, McKeown, Sandora, Kucan, & Worthy, 1996; Sandora, Beck, & McKeown, 1999); led to significantly higher scores on literal and inferential comprehension and understanding of theme (Saunders & Goldenberg, 1999); and led to more complex conceptual understanding of the texts and the development of a repertoire of strategies for making sense of text (Many, 2002).

Ontogenetic scaffolding of comprehension: Peer discussion

As with microgenetic scaffolding, many research programs have examined the impact of ontogenetic scaffolding on comprehension within the framework of peer discussion. Those studies have examined the impact of peer discussion on comprehension of narrative text and expository text.

Peer discussion and narrative text Goatley, Brock, and Raphael (1995) examined the nature of diverse learners' participation in student-led discussions of text as they assumed different roles, responsibilities, and means of negotiating the meaning of text. As well, they examined the manner in which these fifth graders developed the ability to interpret text. The study used the Book Club format (Raphael & McMahon, 1994) in which students first read the text, complete a written response to the reading, participate in a community share (i.e., discussion of text), and instruction. Findings revealed that culturally and linguistically diverse students and those who struggle with reading were capable of assuming varied roles in student-led discussions. Those roles varied from one moment to the next and suggested that assigned roles may not be conducive to the goals of student-led discussions. Students also assisted in negotiating and maintaining the topics of discussion and constructed meaning by using a variety of strategies to gather information from sources as they collaboratively constructed interpretations of text. In short, students were able to use the background knowledge available to them because of cultural differences as a way to help one another make sense of the text. This finding suggested that scaffolded assistance need not come solely from the teacher, but also from peers.

Like Goatley et al. (1995), Rice (2005) was interested in the impact of background on students' ability to construct meaning. Rice examined the responses of eight white sixth-graders as they discussed four realistic fiction Hispanic-American multicultural stories in peer-led discussion groups. In this qualitative investigation, the researcher met with students daily for four consecutive days to read and discuss the stories. Transcripts of the discussions were analyzed using constant comparative methods to determine the influence of students' class, race, and gender on their interpretation of multicultural stories. Findings revealed that students interpreted the plots and characters based on their own background experiences (i.e., socioeconomic status, race), which differed substantially from that of the characters. Socioeconomic status in particular had a large impact on students' interpretations of characters' actions in that students were often unable to relate to the characters and tended to "put down" the characters. Students' cultural norms for physical appearance, language, and food customs also influenced their interpretations to the extent that at times they were unable to identify with the universal themes present in the stories. Overall, Rice's analyses (2005) highlighted the importance of readers' sociocultural context and background on their responses to and interpretations of text.

McMahon and Goatley's (1995) naturalistic investigation examined how fifth graders with prior experience with student-led discussions acted as "knowledgeable others" for peers who had not participated in such discussions previously. The 4-week study examined the interactions of two students with experience in Book Clubs and three without experience. Transcripts of discussions and classroom activities, student interviews and students' written responses were analyzed inductively to identify emergent themes and patterns. Findings showed that initially students relied on an I-R-E pattern in which one student with prior experience in Book Clubs assumed the teacher-like role. Over time other students began to initiate topics of conversation and the group moved away from an I-R-E pattern to patterns with more dialogic interaction that included elaboration, clarification and debate. Findings from this study highlight the fact that students can serve as scaffolds for one another; however, their discourse can also revert back to more traditional patterns of classroom discourse without the support of teachers and peers to monitor and assist them as they adjust to new expectations and roles.

Collaborative Reasoning is a method of discussing texts that stimulates critical reading, critical thinking, and student engagement (Chinn & Anderson, 1998; Waggoner, Chinn, Yi, & Anderson, 1995) by asking students to reflect on central questions arising from their reading. Students take stances regarding their initial positions on the issue and look for textual evidence to support their stance. Students add reasons or provide

challenges by suggesting alternate reasons. As in Book Clubs, an open participation structure is used to evoke more natural conversation. That is, students speak without raising their hands or being called upon, and students monitor their own participation and control their own topics of conversation. Through Collaborative Reasoning, students learn reasoning and argumentation skills and they learn how to respect diverse opinions.

In an examination of the effects of participation in Collaborative Reasoning on the development of individual reasoning, Reznitskaya, Anderson, McNurlen, Nguyen-Jahiel, Archodidou, and Kim's (2001) quasi-experimental study found that fourth and fifth graders who participated in Collaborative Reasoning discussions wrote persuasive essays containing significantly more arguments, counterarguments, rebuttals, uses of formal argument devices, and references to text information than the essays of students who did not participate in Collaborative Reasoning. Findings suggested that collaborative discussion formats such as Collaborative Reasoning provide an opportunity for students to learn how to retrieve argument-relevant information, construct and repair arguments, and anticipate flaws in arguments.

Anderson, Nguyen-Jahiel, McNurlen, Archodidou, Kim, Reznitskaya, Tillmanns, and Gilbert (2001) compared the impact of Collaborative Reasoning discussions and more traditional discussions on the reasoning and rhetorical strategies fourth graders used as they discussed narrative texts. All 104 students participated in both types of discussions, which were counterbalanced in terms of order. Results showed that once an argument stratagem was used for a rhetorical purpose (i.e., managing group participation, acknowledging uncertainty, personalizing the story, making argument explicit, and supporting arguments with evidence) the likelihood that it would be used again increased significantly. In essence, a "snowball phenomenon" occurred in which the use of argument stratagems spread to other children and to other groups once it was displayed. The diffusion of argument stratagems occurred more often in Collaborative Reasoning discussions than in traditional, teacher-controlled discussions.

Almasi (1995) also contrasted peer discussion with teacher-led discussion among 97 fourth graders. However, her major concern was with a particular event known as sociocognitive conflict that often occurs in peer discussion when students encounter incongruity. Using a quasi-experimental design, this study examined the nature of sociocognitive conflicts, the discourse associated with such conflicts, and how the cognitive processes associated with such conflicts were internalized by students in each condition. Findings revealed three different types of sociocognitive conflicts: conflicts with self (i.e., the metacognitive realization that some aspect of the text or one's interpretation was causing confusion), conflicts with others (i.e., realization that incongruent ideas were present among group members), and conflicts with text (i.e., realization that one's response was incongruent with information in the text). Students in peer discussions engaged in significantly more episodes in which there were conflicts with self, whereas students in teacher-led conditions engaged in substantially more conflicts with text. Such participation enabled students in peer discussions to recognize and resolve episodes of conflict significantly better than students in teacher-led discussions, suggesting that they had internalized this metacognitive ability as a result of their participation over time. As well, students in peer discussions were more actively engaged in their discussions in that they engaged in significantly more discourse, their discourse was significantly more complex, and they asked more questions than students in teacher-led discussions.

More recent studies have examined developmental differences between students who participate in peer discussion contexts and those who participate in teacher-led discussions and the impact on cognitive, social, and affective constructs (Almasi et al., 2004). This series of studies originated from a three-year longitudinal research initiative designed to understand students' ontogenetic and microgenetic development as they

participated in peer discussions of text. The *process* and *products* of student learning through peer discussion was examined to understand how students' ability to talk about, interpret, and interact around text developed over time.

Almasi, Garas, Cho, Ma, Shanahan, and Augustino (2004) examined students' cognitive, social, and affective growth in grades K–3 in peer discussion and teacher-led discussion contexts. Participants included 26 teachers and the 412 students in their K–3 classrooms in suburban, urban, and rural contexts. Twelve of the teachers were in the peer discussion treatment condition, and 14 were in the control condition. Findings revealed that students in both conditions experienced significant growth in terms of word recognition and comprehension. However, significant differences did not exist between treatment conditions. More substantive findings were found related to social and affective measures of growth and development. Students in the peer discussion group valued reading significantly more than their counterparts in the control condition. Participation in peer discussions of text resulted in significant differences in the social relationships students built in their classrooms. The changes in social networks from the beginning of the year to the end of the year among peer discussion students exhibited an Egalitarian Pattern of social change. That is, their social networks homogenized over time—there were fewer social isolates and fewer social stars. In contrast, social networks among students in the control condition exhibited a Pattern of Inclusivity and Elitism over time where social ranks became more stratified. More students were labeled social stars creating a prominent, elite group of students. These findings suggest that peer discussion may assist children in becoming more tolerant of others and more accepting of diverse perspectives in terms of academics and play.

In a study of students' interpretive strategy use and language development, Almasi, Garas, Cho, Ma, Shanahan, Augustino, and Palmer (2005) used a time series, or panel, design to gain insight into the intra-individual and inter-individual changes that occurred across a three year time period as students progressed from first through third grade. The same cohort of students in one research site was measured repeatedly on a number of variables at successive points in time to understand the impact peer discussion had on individual students' interpretive strategy use and language development. Findings showed that when children had consistent opportunities to engage in peer discussions of text they were able to use interpretive strategies as tools to achieve deeper levels of comprehension as early as first grade, and with increasing frequency throughout third grade. As well, these findings showed that, with sustained exposure to peer discussion, young readers were able to learn how to cohere and sustain topics in conversations about text with sophistication. The ontogenetic scaffolding provided by the teachers in this study enabled this cohort of children to make substantive growth in terms of the way in which they interpreted literature and the way in which they learned to negotiate the social context in which they constructed their interpretations.

Peer discussion and expository text Hogan, Nastasi, and Pressley (1999) examined the patterns of interaction within peer- and teacher-led discussions of scientific concepts. Over a 12-week period of time one eighth-grade teacher enacted peer-led discussions with six students in one class, and teacher-led discussions with six students in another class. Students were asked to construct an understanding of the nature of matter; use their model to explain the characteristics of solids, liquids, and gases; and present and defend their model to the whole class. Discussions as students engaged in these tasks were videotaped two to three times per week. Data analysis was inductive and included coding: modes of discourse, types of statements, discourse maps, interaction patterns, and response complexity. The goal in both types of discussion was to continually refine and work on weak or incomplete conceptions until they improved. Findings revealed, however, that the manner in which groups attained that goal differed in

peer-led and teacher-led contexts. Peer discussions were more generative and elaborated than their discussions with teachers. Students were more apt to explore ideas through conceptual contributions, they asked more questions to clarify their understanding with one another, and they synthesized ideas more than students in teacher-led discussions. Overall, their responses grew increasingly complex and led to higher levels of reasoning the more they talked. Students in peer-led discussions developed the ability to persevere on their own until conceptual issues were resolved.

In teacher-led groups students talked less, asked substantially fewer questions, and their discourse consisted of more explanations. Discussion in teacher-led groups required fewer turns to arrive at higher levels of reasoning. This made the discussion more efficient, but attaining this level required progressive teacher questioning and probing.

Overall, studies using ontogenetic scaffolding have found a positive impact on students' comprehension. However, the depiction of this impact is more refined. Rather than general improvements on broad measures of literal and inferential comprehension, these studies showed the impact of peer discussion on specific aspects of comprehension and interpretation of text. Students are able to use background knowledge available to them because of cultural differences (Goatley, Brock, & Raphael, 1995) and sociocultural differences in terms of socioeconomic status and race (Rice, 2005) to make sense of and interpret text. Student in peer discussions were also able to internalize the ability to recognize and resolve conflicts significantly better than students in teacher-led discussions (Almasi, 1995). As well, these studies showed that students are capable of learning how to engage in dialogic conversations about text on their own (McMahon & Goatley, 1995) even as early as kindergarten and first grade (Almasi, Garas, Cho, Ma, Shanahan, Augustino, & Palmer, 2005). Students are also able to learn to think critically, retrieve argument-relevant information, construct and repair arguments, and anticipate flaws in arguments when they learn the principles of argumentative reasoning and enact them in peer discussions (Anderson, Nguyen-Jahiel, McNurlen, Archodidou, Kim, Reznitskaya, Tillmanns, & Gilbert, 2001; Reznitskaya, Anderson, McNurlen, Nguyen-Jahiel, Archodidou, & Kim, 2001). Finally, as implied by the theoretical discussion of instructional scaffolding by Wood, Bruner, and Ross (1976) and Meyer (1993), studies of peer discussion of text have shown that students show significant social and affective growth and development when compared to their peers in teacher-led contexts (Almasi, Garas, Cho, Ma, Shanahan, & Augustino, 2004).

Shifting to ontogenetic scaffolding

Research has shown that the open-ended nature of peer discussion has value, but teachers have difficulty learning how to successfully scaffold such conversations. Therefore, several lines of inquiry have examined the manner in which teachers learn to scaffold conversations, and have developed new means of assessing and evaluating the effectiveness of peer discussions.

Teacher movement toward peer discussions Maloch (2002) explored the relationship between the teacher's role and students' participation in peer discussions of literature in third grade. Her 5-month qualitative study used constant comparative and discourse analysis to arrive at two themes. First, students had difficulty shifting from more passive roles in teacher-led discussion to more active roles in peer discussion. They often reverted to the more familiar routines of teacher-led discussions (i.e., raising hands, waiting for teacher leadership, looking for the teacher to help solve problems). Although the teacher supported students in this transition by providing explanations about student tasks and roles and her own, it took time for students to develop this awareness and their discussions were often unfocused and unproductive. A second theme examined the

nature of the teacher's responsiveness to the students' difficulty and found that teachers can be effective as facilitators rather than in the more traditional role of leader. She found that effective scaffolding consisted of: metalinguistic interventions (or metatalk) in which the ground rules of discussion were highlighted, building a shared understanding of conversational strategies over time, and gradually handing over the responsibility for the discussion to students.

Like Maloch (2002), Scharer and Peters (1996) found teachers and students had difficulty learning to implement peer discussions. Their study examined the patterns of discourse and the relationship between teachers' perceptions of book discussions and the way in which students and teachers actually talked about books in their qualitative study of two upper elementary teachers. Transcripts of interviews and group discussions were primary data sources that were analyzed to identify patterns in the ways topics were initiated, sustained, and terminated. Findings revealed that although teachers felt that peer discussions were a valuable way to help children express their opinions, foster higher level thinking, and make personal connections to text, they had great difficulty shifting toward a more student-centered type of discussion. Topics for discussion were overwhelmingly controlled by the teacher and student responses tended to be directed to the teacher.

These studies, although few in number, suggest that developing classroom cultures in which more student-centered and dialogic conversations about text can occur is difficult for both students and teachers. Because of the difficult nature of such a shift, several researchers have attempted to analyze the quality of peer discussions to identify those features that lead to more productive discussions. The thinking here is that, if the qualities that make peer discussions successful can be identified, researchers will know which aspects to focus on while working with teachers and students.

Analyzing the quality of peer discussion Roller and Beed (1994) expressed concern about the quality of discussion in their examination of children's book sharing sessions. The Book Sharing Sessions occurred as part of a reading workshop in which struggling readers ranging in age from eight to 12 self-selected books, presented their book to the group, and other children and the teacher responded by offering questions and comments. Although Roller and Beed (1994) found sufficient evidence of exciting dialogue, there was also evidence that student dialogue was not always as rich as it might be. Three types of dialogue in particular raised concerns: (1) content-free enthusiastic dialogue, (2) substantive but lifeless dialogue, and (3) content-free and lifeless. Their reflection enabled them to come to the realization that teachers must build on children's enthusiasm and trust their oral culture as a legitimate means of constructing meaning—even if it might stand in contrast with adult oral culture.

Chinn and Anderson (1998) used argument network (i.e., interlocking sets of premises and conclusions) and causal network (i.e., discussion events linked in a causal sequence) approaches to represent the macrostructure of interactive argumentation during Collaborative Reasoning discussions. Their analyses of fourth graders' discussions of issues raised in narrative texts provided a means of evaluating the breadth, depth, and explicitness of students' arguments; the extent to which students communicated their perspectives (i.e., argument network); and it provided a means of evaluating students' ability to support and challenge causal links and their ability to compare value judgments and envisionments to one another (i.e., causal network).

Keefer, Zeitz, and Resnick (2000) also developed a means of evaluating the quality of literary discussions. In so doing they identified four dialogue types and contexts: critical discussion, explanatory inquiry, eristic discussion, and consensus dialogue. They contended that critical discussion was the most appropriate type of dialogue for discussions focused on literary content. They examined fourth graders' student-led discussions at the

beginning and end of the year. Discussions focused on a question derived from texts that had been read aloud to students. Graphical coding analysis was developed to show the course of argumentation distributed among participants and then compared with content-based literary coding to assess the quality of discussion. The coding system permitted examination of the source of support for claims made (i.e., nontextual knowledge, facts from text, interpretation of textual information). The social distribution of argumentation was also charted by identifying attacks, challenges, and concessions. These analyses were used to determine the connection between discussion quality and arguments supported by premises based on interpretation of literary and textual issues.

Almasi, O'Flahavan, and Arya (2001) also developed a means of analyzing the quality of peer discussions. Their descriptive study examined the manner in which more and less proficient peer discussion groups managed topics and group process across four months. The microanalyses consisted of taxonomic analysis and contextual analysis of discourse and patterns of interaction. The contextual analysis determined how well conversations cohered in terms of whether topics were changed or sustained (e.g., topic shifts, linkages, returns) as students negotiated their discussions (Brinton & Fujiki, 1984; Schegloff, 1990). This was accomplished by considering the structure underlying the entire conversation, rather than simply local coherence (Agar & Hobbs, 1982; Reichman, 1978). As in many peer discussions, the groups deviated from talking about text at times. This talk was not off topic, as it facilitated how the group functioned. This type of talk is known as metatalk (Hobbs, 1990). Frequency data provided a description of the influence of metatalk on conversational growth and development. Thus, group management was examined by analyzing task parameter and group process metatalk. Task parameter metatalk consisted of talk about what can be discussed and the materials needed for discussion. Group process metatalk consisted of talk related to how the group functioned (e.g., turntaking, encouraging participation, interaction behaviors, topic shifts).

Results indicated coherence is key to conversational competence. Proficient peer discussion groups were able to sustain topics of conversation by revisiting old topics, making linkages between topics, and embedding topics within one another. These factors increased and developed gradually over time. Less proficient groups had substantially fewer linkages and embedded topics primarily because teachers and students initiated large amounts of metatalk. These findings suggest that large amounts of metatalk and teacher intrusion cause disjuncture to peer discussion and impair the group's ability to maintain topics.

Social/student perceptions of peer discussions

While a great deal of the research reviewed here has shown the positive effects of discussion on comprehension, it is also important to critically examine the social impact of more student-centered discussions on student perceptions and the social contexts they create. Using a multicase study approach, Alvermann, Young, Weaver, Hinchman, Moore, Phelps, Thrash, and Zalewski (1996) examined 95 middle and high school students' perceptions of class discussions of texts in five classes (English, language arts, gifted education, U. S. History, and Global Studies) across 1 academic year. Findings led to three assertions. First, students were aware of the conditions they believed to be conducive to discussion. In particular, students felt four conditions were important for good discussions: (1) working in small groups increased the degree to which each student could participate and decreased the potential for social risks, (2) knowing and liking group members contributed to student participation, but students also realized friendships could develop along the way, (3) contributing to group talk was every student's responsibility, and (4) staying focused on the topic contributed to creating

quality discussions. The second assertion found the tasks teachers present and the topics or subject matter they assign for reading influence students' participation in discussion. Demanding tasks enabling students to reason and evaluate ideas were perceived as more interesting and worthy of discussion. Debatable topics students enjoyed and found interesting were more suitable for discussion. The third assertion found that students saw discussion as helpful in understanding what they read. As part of this assertion, students identified three ways discussions helped them understand text. First, students valued listening to one another and the opportunity to gain new ideas about a text from others' comments. Second, students found the opportunity to voice their opinions and persuade others as helpful. Finally, students found the opportunity to attend to vocabulary during discussions helpful as it provided the opportunity to identify and resolve the meanings of unknown words, which assisted comprehension of text.

Similar to Alvermann et al. (1996), Evans (2002) examined fifth-graders' perceptions of literature discussion groups and found similar results. Like the middle and high school students in Alvermann et al.'s (1996) study, these fifth-graders also had clear notions of the conditions that fostered effective discussion. They noted that basic requirements (i.e., reading the book, writing responses, and participating in the discussion), respect for one another's thoughts, having people with whom you can work in your group, the tasks, and the texts were all features that created productive discussions. Unlike the older students in Alvermann et al.'s (1996) study, the fifth-graders in Evans's (2002) study felt the gender makeup of their discussion group influenced how they participated in discussions. Students tended to have difficulty when in mixed-gender groups and preferred to work in same-gender groups. Likewise, these fifth-graders felt the presence of a bossy group member influenced their participation. Students who told others what to do had a negative influence on the group. These studies show that students of all ages have clear perceptions of what productive discussions look like.

Evans (1996) challenged the assumption that peer discussions provide "democratic" spaces where all students' voices are heard and valued equally. In her qualitative examination of the complexity in peer-led discussion contexts, she studied one group of five fifth graders as they engaged in six peer-led discussions of text across a two-week period of time. Constant comparative and content analyses were used to examine the manner in which students positioned and were positioned by one another. Findings revealed that students tended to assume particular roles. Initially students positioned one another based on leadership (i.e., verbal dominance and managing the discussion). In time, however, gender became a factor as the boys in the group began taunting one of the girls. Their efforts positioned the girls as powerless and led to the boys attaining power through teasing rather than through leadership skills.

In her year-long ethnographic study of literature discussions in a fifth/sixth grade classroom, Lewis (1997) also examined the ways social context and positioning shape peer-led discussions of text. Findings revealed that talk became a way for students to achieve social and interpretive power as they interpreted text. That is, in this classroom students who took learning and inquiry seriously had more power than those who did not. This created situations where students competed with one another to attain power. Such power often depended on the allegiances students formed in and out of school. Peer-led discussions also provided a means by which power relations were interrupted and possibly transformed when less powerful students challenged the ideas of those with more power. Overall, in the absence of an authority figure such as the teacher, findings showed that the peer-led discussion context often provided dominant students with a means of attaining a position of power as they interpreted literature.

Möller's (2005) interpretive case study examined the shifting roles one struggling reader experienced as she participated in literature discussions. Ashley was a student

who struggled with decoding, comprehension, and acceptance in the group. She was a student who, in typical classrooms, might be singled out as “deficient,” an “outsider to the literacy club” who might experience isolation and ostracism. However, her participation in 27 peer discussions as a learner, peer, and teacher enabled her to attain shifting positions ranging from less-capable member in need of support to capable peer working with peers to collaboratively construct meaning to more capable peer working at her developmental level and assisting others. Ashley moved fluidly in and out of these positions. She was able to help the group understand characters’ situations, voice non-stereotypic and antiracist thinking, and connect emotionally to textual language in the process. Key to Ashley’s growth was the teacher’s support in terms of teaching comprehension and response strategies, valuing her contributions, and maintaining a classroom culture of acceptance and intolerance for taunting.

Möller and Allen (2000) also investigated struggling readers’ responses to text as they engaged in literature discussions with their teacher. Their interpretive, inductive, and generative field study examined the discussions of four struggling readers as they responded to Mildred Taylor’s *The Friendship*. The teacher (Möller) was present in the discussions to help students develop strategies for participating meaningfully in student-led literature discussions. She provided scaffolding by using supportive tones and gestures, creating a climate where students could explore uncomfortable aspects of the text, and asking questions and making statements to support students’ inquiry. Categorical analysis found that the girls moved from spectators to actors in that they arrived at deep levels of interpretation in which they became personally involved. At varying times their responses and reactions to the text led them to engage by making connections to the author’s craft, themselves, their families, their community, history, and present social issues. As well, their responses created a tension in which they were engaged but also resisted the meaning they were constructing. They resisted by critiquing the characters’ actions, by rewriting themselves into the story, by predicting less negative outcomes for the characters, and by disengaging at times to create a safe space for themselves to rest from disturbing issues. The girls ultimately felt the need to create a safe space for the discussion in which they were willing to contribute. These struggling readers were able to use reading, writing, and discussion to construct meaning about the text and to develop an awareness of social justice issues related to historical racism.

In summary, these studies show mixed results in terms of the social and cultural impact of peer discussion. Whereas some students valued peer discussion and saw benefit in terms of assisting comprehension (Alvermann, Young, Weaver, Hinchman, Moore, Phelps, Thrash, & Zalewski, 1996), others felt gender and/or the presence of bossy or dominant group members influenced how they participated (Evans, 1996, 2002). Lewis (1997) found that talk in peer discussions became a way for students to exhibit and exert power. However, as Möller (2005) found, when teachers are able to create a classroom culture of respect, acceptance, and intolerance for taunting, even struggling students who are typically the victims of such taunting, can experience success.

IMPLICATIONS FOR PRACTICE

The studies reviewed here have several implications for practice. First, discussions that rely on a more student-centered, dialogic approach to discussion that moves beyond traditional, I-R-E participant formats lead to significant growth in comprehension. These findings are clear and consistent across all of the studies reviewed here and suggest that there is little value in traditional teacher-led discussions when compared with more student-centered dialogic discussions.

Findings also suggest that different types of teacher scaffolding foster distinct types of growth. Discussions featuring microgenetic scaffolding that uses open-ended teacher questions, queries, and probes foster general overall comprehension of the content of texts. Peer discussions featuring ontogenetic scaffolding over time tend to foster the development of comprehension and interpretive processes. This suggests that teachers should use both types of discussion; however, their use should be planful and deliberate. Teachers should not default to one particular type of discussion over the other. Instead, it would be helpful to assess the quality of student discussions and use such assessment to design a long-term developmentally appropriate plan for ontogenetically scaffolding students so they learn how to use interpretive and comprehension strategies to make sense of text and to learn how to interact with one another in a way that fosters respect, tolerance, and acceptance of others and of diverse perspectives. Along the way, other types of discussions should periodically have more teacher involvement by way of microgenetic scaffolding (e.g., using open-ended questions, queries, and probes and non-evaluative feedback) to teach students how to understand the content of particular texts. As Meyer (1993) reminded us, however, all scaffolding should be conducted as a joint, collaborative effort among teachers and students in which the teacher provides temporary support and then gradually releases responsibility for the task to students.

CURRENT AND FUTURE RESEARCH

While current research on discussion and its impact on comprehension is beginning to take on a more ecological approach in which social, cognitive, and affective constructs are examined across settings, we still know very little about the nature of instructional scaffolding, particularly ontogenetic scaffolding. Future research might begin to examine how teachers plan for and enact long-term scaffolding that leads to student learning. As well, research must take on the challenge of simultaneously studying teacher and student growth. Like complex ecological systems, classrooms are dynamic and in a constant state of flux. Researchers must begin to develop new designs that permit such study.

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